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FOREST PRODUCTS
OF
JAMMU and KASHMIR.

BORROWER'S NO.	ISSUE DATE	BORROWER'S NO.	ISSUE DATE

FOREST PRODUCTS

OF

JAMMU AND KASHMIR

COMPILED BY

S. N. KAUL, M. F.

CONSERVATOR OF FORESTS.

SRINAGAR.
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1928.

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PREFACE.

The following pages embody the results of an attempt to describe the uses of some of the trees, shrubs and herbs of economic importance found in the forests of Jammu and Kashmir. Kashmir has for ages been famous as a country where Nature has been prolific in the display of its varied bounties; and the magnitude and importance of its economic resources are being gradually realised with the advance of science and modern methods of utilization in the country. The forests of Kashmir are particularly noteworthy in this respect.

"The most striking of the first impressions in this country is the magnitude of its forest resources and its coniferous forests are the finest in Northern India". Even at the present stage the forests of Kashmir are more developed than any other branch of activity in the country and yield a larger revenue to the Government than any other department.

The importance of the herbacious wealth of the Himalayas has been recognised and held in high repute from the most ancient times in the *Vaidic* system of medicine. The well known *Sanjiwani* of Ramayana fame is said to have been brought from the Himalayas. Kashmir—the beautyspot of the Himalayas—holds its own in this respect as well. The herbacious flora of Kashmir is extremely rich. Kuth—called *Kashmirja* by the ancients, the very name of which means "Kashmir born"—is found exclusively in this country and is the source of a large income. The country is full of plants and herbs some of which have been very highly spoken of in Ayurvaidic medicine, but no means by which the plants mentioned therein can be traced out and identified, have been laid down.

Before the introduction of aniline dyes in the modern dyeing, all the dye required for dyeing wool used in making the famous Kashmir shawl was obtained from indigenous drugs. These vegitable dyes are still in use.

The demand for a better knowledge of the peculiar properties possessed by some of these plants is constantly increasing. But, at present, no authentic work dealing exclusively with the subject is in existence. It is to meet this demand—though inadequately—that this attempt has been made.

Most of the plants mentioned in this manual though considered efficacious in the Indian system, have not so far been introduced in modern medicine; for, no proper scientific research has been made to ascertain their definite properties. Their uses, therefore, have been noted down from standard books. Some of the important drugs, however, have been experimented upon at the School of Tropical Medicine, Calcutta, and their clinical and other properties carefully examined. Most of the results arrived at have already appeared in the Indian Medical Gazette, and have also been published in separate pamphlets. The results of these investigations have been reproduced and such drugs treated more fully in Part I of this manual. Others that have not been tested will serve as a store from which to draw in future.

The vernacular names have been carefully selected after making due allowance for local variations. The departure in this connection from the nomenclature usually given in standard works was, therefore, inevitable. The local names, especially of the drugs peculiar to Kashmir could have been known to the authors of such works only by heresay, though in other respects their works might be so admirably complete.

As it was desired to complete this manual at the shortest possible notice, it could not be made as exhaustive as was originally intended. The notes appended to the drugs in Part II, are therefore, of necessity, brief. As a preliminary attempt, what has been recorded may serve as a useful guide to those who are interested in Kashmir plants.

The main object of publishing this manual is to provide first hand information about the forest products that are of accepted usefulness and have an established market and to suggest others that have similar promise before them. It is hoped that those interested will take up the investigation of such products, as are likely to prove beneficial to science and trade. Any information that may be required in respect of any of the products found in the forests of Jammu and Kashmir, will very gladly be supplied by the Conservator of Forests, Utilization Circle, Srinagar, Kashmir.

The information given in the manual is by no means complete. It would indeed be very useful to compile a complete record of all the economic forest products found in the country and any suggestions regarding additions or alterations for a subsequent edition will therefore be highly appreciated.

It would have added considerably to the usefulness of this manual if the more important plants were illustrated. But it was not possible to obtain the prints in time and since it was necessary to compile and issue the present edition expeditiously, the idea of incorporating illustrations was given up. It may, however, be practicable to include illustrations in a subsequent edition.

Fortunately illustrations of many of the plants are available from the direct colour photographs of fresh specimens, taken by Mr. B. O. Coventry, who has already reproduced some of them in his "Wild Flowers of Kashmir". I am grateful to him for his kind permission to reproduce the picture of Saussurea sacra from his book mentioned above, as a frontispiece, for this manual.

In the end I wish to express my grateful acknowledgements to standard authors namely Sir George Watt; Dr. K. L. Dey, C. I. E.; Lt: Col: K. R. Kirtikar, I. M. S.; Major B. D. Basu, I. M. S.; and Dr. K. N. Nadkarni, from whose works, I have been able to collect much useful information on the subject treated in this manual.

I am particularly indebted to Lt: Col: R. N. Chopra, I. M. S., for the results of his personal investigations of indigenous drugs, chiefly those found in Kashmir. I found these extremely useful and interesting and availed myself of much of the valuable information contained therein. I have quoted verbatim from his reports the results of his experiments on some of the more important plants.

My thanks are also due to L. Amin Chand, Assistant Conservator of Forests, for his assistance.

Lastly I am very thankful to H. L. Wright, Esquire, I. F. S., Chief Conservator of Forests, for his able guidance in the compilation of this manual.

Dated Srinagar
August 1928.

S. N. KAUL.

PART I.

A DESCRIPTION OF SOME OF THE DRUGS OF COMMERCIAL IMPORTANCE FOUND IN THE FORESTS OF JAMMU AND KASHMIR.

BORROWER'S NO.	ISSUE DATE	BORROWER'S NO.	ISSUE DATE

ACONITUM CHASMANTHUM, Stapf.

INDIAN ACONITE.

N. O. RANUNCULACEÆ.

Vernacular Names. *Hind.*— Mohri, Mohra, Bis. *Kash.*—Banbalnag. Mohand.

Locality. It is found in abundance, growing wild all over high *margs* from 8,000′ to 12,000′ specially at Razdhani on the Gilgit road and Khillan Marg.

Description. A tall biennial with stout stem 1′ to 2½′ in height. Leaves numerous, 3 palmatipartite almost to the very base. Flowers blue in a raceme. Follicles oblong. Seeds many in each follicle, equally 3-winged. Roots paired, tuberous. Tubers, grooved and wrinkled, black outside, brown right through. The roots are collected late in summer, just when the fruit ripens.

Uses. A. Chasmanthum is one of the poisonous

Aconites and was for some time supposed to be the European Aconitum Napellus but is now known to be a distinct species. The alkaloid named *Indaconitine* obtained from the plant is of special interest, as it represents a compound which is intermediate between the *Aconitine* of the European Aconitum Napellus and the *Pseudo-Aconitine* of the Indian aconite (Aconitum ferox). A peculiar property of *Indaconitine* is its capability of crystallising in several forms from the same solvent.

A. Chasmanthum has given 4·28 to 4·50 % of the total alkaloid. In the European variety of A. Napellus the total alkaloid content is 0·4 to 0·5 per cent and that of A. ferox varieties is 0·86 % so that the alkaloid content of A. Chasmanthum is about 10 times that of A. Napellus and about 5 times that of A. ferox.

Aconite is one of the oldest medicines used both by Hindoo and Mohammaden physicians in India and is one of the commonest drugs sold by the druggists. It is used in the treatment of fevers and rheumatism and as a remedy for cough, asthma, and for snake-bite.

Market. The annual output from Kashmir forests is about 100 maunds but much more can be collected if there is a demand. The present rate is Rs. 20/- to Rs. 30/- per maund ex-godown Baramulla, Kashmir. Amritsar is the chief market.

ACONITUM HETEROPHYLLUM, Wall.

INDIAN ATEES.

N. O. RANUNCULACEÆ.

Vernacular Names. *Sans.*—Ativisha. *Hind.*—Atis. *Pb.*—Patris. *Kash.*—Patis. *Pers.*-Vuggiturki.

Habitat. Common in the sub-alpine and alpine zones of the Himalayas from 7,000′ to 15,000′. Very common in Gangabal and Amarnath.

Description. Stem erect, leafy, 1′ to 3′, simple or branched from the base. Leaves 2″ to 4″ broad, ovate or orbicular, sharply toothed. Racemes often panicled, many flowered. Flowers more than 1 in. long, bright blue or greenish blue with purple veins, helmet half as high as long, shortly beaked. Follicles 5, downy. Roots tuberous, pure white inside and with an intensely bitter taste.

Properties and Uses. The root is officinal in the Indian Pharmacopœia and is considered astringent, stomachic and aphrodisiac. It is a valuable febrifuge and antiperiodic and is used in place of quinine. It is considered to be an excellent tonic for combating debility after fevers and other diseases and is very efficacious in diarrhœa and dysentery.

The active principle is *Atisine.* an amorphous alkaloid of intensely bitter taste, but non-poisonous. *Aconitine* is absent in true Atis.

Market. The chief market is Amritsar where the

Kashmir root being long, solid and white is much appreciated and fetches Rs. 125/- to Rs. 150/- per maund. In the retail market good patis fetches as much as Rs. 7/- per seer or Rs. 280/- per maund. Large quantities of patis are exported from the frontier districts of Kashmir every year.

ARTEMESIA MARITIMA, Linn.

Syn—A. BREVIFOLIA Wall.

WORMSEED.

N. O. COMPOSITÆ.

Vernacular Names. *Kash.*–Tethwen. *Pers.*–Afsantin.
Locality. Common on dry open hill slopes 8,000′ to 10,000′. Abundant in Gurez.

Description. A white hoary shrub. Rootstock woody and branched. Leaves ovate, pinnatisect, often quite white with many small segments. Flower heads ovoid or oblong, often reddish.

Leaf and flower buds as well as leaves are collected in August when the buds begin to open, the collection time is thus very limited.

Properties and Uses. It is officinal in both Indian and British Pharmacopœias. The active principles obtained are *Santonin* and *Artimisin.*

Tests of the Kashmir drug made by a Hamburg firm gave the following results :—

1. Flower buds and leaves. Santonin 1.95 per cent.

2 Stalks (thick stems excluded) Santonin 1·19 %.

The yield of Santonin from Kashmir samples has generally been found to be above 0·9 %. Flower buds usually contain a higher percentage of Santonin than leaves.

"Santonin extracted from A. maritima which grows in the mountains of Kashmir closely resembles in its physical, chemical and physiological properties the Santonin imported from Europe. Its therapeutic efficacy is good."

Dr. R. N. Chopra. (Ind. Med. Gazette Vol. LIX)

Santonin is now well known in India as a vermicide. It has anthelmintic, deobstruent and stomachic tonic properties. It is also useful in gleet. It has been successfully used in cases of ague, intermittent and remittent fevers. (B.D. Basu). The plant makes a good fodder for ponies and sheep in places where no other fodder is available.

Market. Artemesia is one of the valuable products of Kashmir forests and large quantities of the drug are exported to India as well as to Europe. The plant is so abundant in Kashmir that the necessity of a manufacturing plant in the country is being felt very keenly. In fact arrangements to establish a plant for the manufacture of Santonin are under completion. In 1924 the price of Santonin was Rs. 720/- per pound. The present price in London is £ 52. per kilo.

ATROPA BELLADONNA, Linn.

DEADLY NIGHTSHADE.

N. O. SOLANACEÆ.

Vernacular Names. *Punj.*–Jalla Lubar, Jalla ka phal, Ban tamaku, Suchi, Angur-shefa. *Kash,*—Mait-brand.

Locality. It is found growing wild at elevations 7,000′ to 10.000′ all over Kashmir forests, especially along the newly made road-sides, fresh clearings and burnt areas, abundant at Gulmarg and in Rajwar and Lolab valley forests.

Description. A tall herbaceous plant with solid stem 3′ to 6′ in height. Leaves large, simple, alternate, entire, 6″ to 12″ by 2½″ to 4″. Flowers greenish yellow, bell shaped. Calyx persistent. Fruit when ripe a black shinning berry.

Collection time. The leaves are collected just before the fruit appears and the roots after the fruit ripens.

Uses. The leaves and dried roots are officinal in both Pharmacopœias. All parts of the plant contain *Atropine* and *Hyoscyamine.* It is a powerful sedative, anodyne and anti-spasmodic. *Atropine* is extensively used in opthalmic practice. A liniment made from the root is invaluable as an anodyne application in rheumatic and neuralgic pains.

The Indian plant gives 0·4 to 0·45 per cent of the alkaloid which compares very favourably with the European drug which yields 0·2 to 0·6 per cent of total alkaloids. Leaves and roots of Kashmir Atropa Belladonna were analysed by Major R. N. Chopra of the School of Tropical Medicine, with the following results:—

"The root on analysis was found to contain 0·81 per cent of the total alkaloids as compared with 0·5 per cent which is the average yield from good samples. The standard laid down by the British and United States Pharmacopœias is 0·45 per cent of the total alkaloid in the root. The leaves on analysis showed 0·5 per cent of the total alkaloid as compared with 0·6 per cent which is the yield from average good samples. The standard laid down in the British and United States Pharmacopœias is 0·3 per cent of the total alkaloids". The alkaloids are physiologically active and Major Chopra is of opinion that very good quality of *Atropine* and *Hyoscyamine* can be manufactured from Kashmir Belladonna.

Market. The chief markets are Rawalpindi and Amritsar where the prices range from Rs. 20/- to Rs. 30/- per maund for roots and Rs. 30/- to Rs. 40/- per maund for leaves. The annual output from Kashmir is about 100 maunds of roots and about the same quantity of leaves. During the great war when supplies from outside were cut off, the importance of this plant was much realized. Extraction all over the Himalayan forests, started indiscriminately with the result that the plant became rare and dishonest collectors adulterated the belladonna leaves with the leaves of Phytolacca Acinosa which they very much resemble. Thus the Indian product got a bad name. At Baramulla special care is taken to stock pure belladonna roots and leaves.

BERBERIS ARISTATA, D. C.

B. LYCIUM, Royle., B. ASIATICA, Roxb.

AND OTHER SPECIES.

THE INDIAN BERBERRY.

N. O. BERBERIDEÆ.

Vernacular Names. *Kash.*—Kaodach. *Hind.*—Rasaut, Chitra, Kemlu, Simlu. *Sans.*— Daru- haridra. *Pers.*— Fil–Zahrah, Jir–khar.

Locality. Common all over the State, between 6,000′ and 9,000′. Karnah, Drawa, Kishtwar and Kashmir.

Description. Erect spinous shrubs. Leaves in tufts, simple, generally toothed. Flowers small, yellow, in racemes. Sepals, petals and stamens 6 each. Fruit a berry, globose or ovoid, usually covered with bloom.

Parts Used. The stem, root–bark and fruit.

Uses. The active principle obtained is the alkaloid *Berberine.* The root bark used in the form of tincture, which is officinal in Pharmacopœia of India is antipyretic, antiperiodic, diaphoretic and tonic.

A crude extract known as *Rasaut* has been used in Hindoo medicine from a very remote period. It is regarded as alterative, deobstruent and is used in skin diseases, menorrhagia, diarrhœa, jaundice and above all in affections of the eye. The fruit is edible and makes a nice jam or *sherbet*, which is said to have many advantages.

Mr. W. H. Lovegrove, I. F. S., late Conservator of Forests, Jammu & Kashmir State, describes the method of preparing rasaut as follows:—

> "Rasaunt is a brown extract prepared from the root and lower stem wood of Berberis aristata, Berberis Lycium, and probably Berberis asiatica or coriaria. The Berberis is locally called Kemlu.
>
> In boiling out the product large quantities of green fuel are burnt. The common species used are banj (Quercus incana), keint (Pyrus Pashia), kakoa (Flacourtia Ramontchi), kembla (Mallotus philippinensis) and other broad leaves. Dry fuel is objected to as being more difficult to control in the kind of furnace used.
>
> The roots of the berberis are dug up and after cutting off say, the upper $\frac{3}{4}$ of the stem branches are well washed to remove all earth and foreign matter. They are then cut up into small pieces, the smaller the better. In the Basant-

garh Range the sizes of the chips are about 1½″ or 2″ x ¼″ or ½″, but in the Basohli Tehsil (which prides itself on producing a better quality Rasaunt) the pieces are much smaller.

The chips are then put into earthen pots, in the proportion of 3 seers of chips to 5 seers of water, the pots being roughly 1′ high 7″ diameter.

These pots are then placed in two parallel rows on the top of a long furnace, the pots being sealed with clay into the small holes left on the top of the furnace for their reception, thus closing all cracks to the draught and distributing the heat from the fire evenly throughout the flume of the furnace.

The boiling goes on for about six hours. As water evaporates fresh water is poured in so as to keep the chips always well covered. At the end of this period the contents of pot 2 are poured into the practically empty pot 1, the contents of pot 3 into pot 2 and so on. This is not done quickly but leisurely and water added to rinse the chips. Where the iron pan is used, the extract is poured into that instead of into pot 1.

In this way the liquid contents of all the pots eventually find their way to pot 1 on each row, or into the iron pan where it is still further evaporated until sufficiently concentrated. It is not known how long this takes, but apparently there is no hurry about it, and it may stand for some days or for a few hours. When ready it is of the consistency of a thick treacle, and is poured out into small receptacles made of the leaves of *belongar* (Bauhinia Vahlii) where it cools and thickens; eventually being packed into baskets for transport to Amritsar.

The larger part of the " rasaunt " extract appears to be exported from Amritsar to Multan, whence it probably extends to Sindh and other desert tracts. Its use is largely in mixing with drinking water. What its effect on the water is, is not known to the writer at present, but its presence probably neutralises a salt, as it is said to make the water "cooler".

Market. The chief market is Amritsar. Rasaut is extracted from the forests of Jammu province and is exported to Amritsar and other places in the Punjab.

COLCHICUM LUTEUM, Baker.

YELLOW-FLOWERED SAFFRON.

N. O. LILIACEÆ.

Vernacular Names. *Sans.*— Hiranya tutha. *Hind.*-Harantotia. *Kash.*-Virkum. *Pers.*-SuranjanTalkh.

Locality. From 4,000′ to 8,000′, very common every where near Srinagar, Tragbal, Chakothi, and Kishtwar Khas.

Parts used. The corm and seeds.

Description. A small perennial with a few radical linear leaves which elongate when the fruit appears. Flowers golden yellow. One of the earliest flowers in spring in Kashmir. The stem is a fleshy corm under ground ovoid in shape. When the upper coats are removed a creamy white body comes out which is the article of trade.

Collection time. The seeds are collected when ripe in April; the corms after the seed ripens in May at higher elevations and in April lower down.

Uses. Both the seeds and the corms possess *Colchicine* of which the 1/100 grain proved fatal to cats. (Hooper.) It is also used in Vedic and Unani medicine and is an old well known remedy for gout and rheumatism. The corms constitute the bitter *Hermodactyl* of the later Greeks and the *Suranjan* of the Indian druggists.

Market. The plant is very common in Kashmir, but has come to the notice of the Forest Department only lately. The chief market is at Amritsar, where it sells at Rs. 80/- to Rs. 90/- per maund. Kashmir can supply large quantities of the drug.

DIGITALIS PURPUREA, Linn.

N. O. SCROPHULARINEÆ.

Common Names:- *Eng.* Foxglove.

Locality. It is not indigenous to Kashmir but has been grown in nurseries in the valley at about 7,000′ elevation in Kairu Forests, at Tangmarg.

Description. A biennial herb 1′ to 3′ in height. Leaves broadly orate or ovate-lanceolate, coursly viened and downy. Flowers purple and white in a long raceme.

Parts Used. The leaves are collected when the plant begins to flower. The raising of the plant is comparatively easy but the drying process is rather complicated. In Kashmir the leaves are dried under shade and thus they retain a certain amount of moisture. After drying they should be kept in well filled air tight containers.

Uses. It is a well known drug of the British

Pharmacopœia. The leaves were analysed by Major Chopra who wrote:—

> **"Biological assay by Hatche's cat method.**
>
> 1924 Kashmir leaf:--1 c.c. of standard tincture equals 0·688 c.c. of Kashmir leaf tincture so that the leaf is about 147 per cent of the strength as compared with the imported leaf. The frequency of the heart beat in cats was reduced by from 60 to 70 beats per minute.
>
> 1925 Kashmir leaf. Specimen No: 1.—1 c.c. of standard tincture equals 0·77 of the Kashmir leaf tincture so that the leaf is 128·5 per cent in strength as compared with imported leaf.
>
> Specimen No: 2.—1. c. c. of standard tincture equals 0·70 of Kashmir leaf tincture *i. e.* strength 140 per cent. The frequency of the heart beat in cats was reduced by from 60 to 70 beats per minute in both cases.
>
> **Clinical trials:**— The tinctures from 1924 and 1925 leaf were tested clinically in patients. The patients were got under digitalis effect with 4 to 6 drachms of the freshly prepared tincture per 100 pounds body weight with both specimen of leaf.
>
> The results obtained clearly show that the tincture of digitalis made from leaf grown in Kashmir was as good, if not better than the imported leaf or leaf grown in other parts of

India, we have tested. We have recently shown that tinctures of even the best make imported into India lose 20 to 40 per cent of their potency in a very short time. Glucosides deteriorate in the leaf also. In view of these facts there is likely to be a demand for good digitalis leaf in India. Digitalis grown in Kashmir according to my investigations is superior to that grown in other parts of the Himalayas and Nilghari. "

Market. Digitalis leaves are much in demand for the pharmaceutical works in India. The plant has recently been introduced in Kashmir and is being raised in nurseries which are being established in several localities. The first nursery was established at Tangmarg which is supplying about 10 maunds of the leaf annually. It is hoped that within the next few years large quantities of leaf will be supplied from Kashmir. Last year's produce from the nurseries fetched Rupees forty per maund ex-godown Baramulla (Kashmir).

HYOSCYAMUS NIGER, Linn.

HENBANE.

N. O. SOLANACEÆ.

Vernacular Names. *Kash.*— Bazar Bang. *Pers.* and *Hind.*— Ajwain Khurasani, Bazrul.

Habitat. Common on waste lands near villages and also in low forests from 5,500′ to 9,000′. The drug is very common in Kashmir. It has also been cultivated successfully at various places in India. The plant is practically identical in chemical constituents with European species, and it is remarkable that practically the whole of the Hyoscyamus used in India is imported. Seeds are imported from Persia and Afghanistan.

Description. An erect coarse herb, pubescent and more or less hairy. Leaves cauline, sessile, ovate or oblong, lobed 5 in. by 2 in. Flowers subsessile, pale yellow-green, veined with purple, funnel shaped. Calyx 2/3 in., softly hairy in the base, capsule ½″ diam. with a hard cap opening transversely.

Uses. It is officinal in both Pharmacopœias. The active principle which is mainly contained in the seeds and is also found in the leaves and green flowering tops is *Hyoscyamine* one of the three mydriatic alkaloids. It is split up into *Hyoscine* and *Hyoscinic acid.* The seeds yield about 35 per cent of oil. *Hyoscyamine* is sedative, anodyne, antispasmodic, stimulant and mydriatic. Its effects are milder than those of Belladonna. It is largely prescribed in mental excitement, insomnia, palpitation connected with debility and hysteria.

> " A Sample of Hyoscyamus sent to us from Kashmir contained ·03 per cent of the total alkaloids as compared with ·065 or more occuring in the specimen used in the B. P. (*Ind. Jour. Med. Res. Vol XIII*).
>
> I am of opinion that Hyoscyamus from Kashmir though it has a low alkaloid content can be substituted for imported drug."(Dr. Chopra).

Market. The leaves are now much in demand. The price at Baramulla (Kashmir) is Rs. 30/- per maund. Large nurseries are being made to produce this valuable drug and with better methods of drying and collection, it is hoped to obtain a higher percentage of alkaloid from the drug.

INULA RACEMOSA, Hook.

N. O. COMPOSITÆ.

Vernacular. Names. *Kash.*—Poshkar. *Punjb.*-Pokhar-mool. *Pers.*—Zanjabil-i-Shami. *Arabic.*—Rasan.

Locality. It is found growing in wet places specially in Gurez on nalla banks on elevations from 7,500′ to 9,000′. It is rather rare because much of it has been extracted. The only other place where it is known to exist outside Kashmir is the Kaghan Valley of the North Western Frontier Province, but the extraction from these places has been so heavy that it is nearly extinct and may only be found there as botanical specimen. It can be easily grown in nurseries at suitable places.

Description. A tall stout herb 5′ to 6′. Stem grooved. Leaves densely tomentose beneath, crenate, radical 8″ to 18″ by 5″ to 8″, narrowed into a petiole as long, elliptic-lanceolate; cauline leaves, often deeply lobed at the base, half amplexicaul. Heads many, very large 1½″ to 2″ in diam., racemed. Flowers large, conspicuous, yellow. To a casual observer the flowers look like those of the sun-flower (Gul-i-Aftab or Suraj Mukhi)

Collection time. The roots are collected after the seeds ripen late in summer or early in autumn.

Uses. The root of this plant is used in veterinary medicine. The dry roots have a weak, aromatic odour resembling orris and camphor; their flavour is aromatic and slightly bitter and their action a mild tonic (Watt).

Arabian writers recommend it as an expectorant, and as a resolvent in indurations(Honnigberger). In America the drug is still resorted to in the treatment of amenorrhœa, while it is found to be sometimes beneficial in chronic diseases of the lungs, when complications of general debility or want of tone in the digestive organs exist. They also possess diaphoretic, diuretic, expectorant and emmenagogue properties (Watt).

Market. The chief market is Amritsar. As the root is fragrant and much resembles Kuth it is used to adulterate Saussurea Lappa (Kuth). No legitimate Kuth is sold at Amritsar. The local demand has to depend upon smuggled Kuth and at times when smuggled Kuth is not forthcoming Poshkar is passed on as real Kuth and fetches very high price. Once it went upto Rs. 175/- per maund. Recently it fetched Rs 87/- per maund at Amritsar. The price varies with the quantity of smuggled Kuth in the market.

INULA ROYLEANA, D. C.

N. O. COMPOSITÆ.

Vernacular Names. *Kash.*—Malin. *Pb.*—Mallun.

Locality. It is found in abundance between 8,500′ and 12,000′ under little or no shade on comparatively dry hill slopes. Zojpal, Khillan marg, Gurez.

Description. An erect robust perennial. Leaves simple, alternate, elliptic lanceolate, cauline leaves few, distant, the lower-most with a winged petiole and the uppermost sessile and auricled. Heads solitary, golden yellow, 3″ to 6″ diameter. Ligules curling, long. Roots look like mesh work.

Collection time. It is collected throughout the year but the best collection time is when the seed ripens.

Uses. No use has been found in European medicine. Indian Vaids and Hakims use it for killing lice. It is also used to cure boils.

Market. Amritsar is the chief market, where it is fetching Rs. 9/- to Rs. 12/- per maund. The roots very much resemble Inula grandiflora which are used for the same purposes as those of Inula Royleana.

JURINEA MACROCEPHALA, Benth.

N. O. COMPOSITÆ.

Vernacular Names. Dhup, Dhup Lakar, Gugal dhup, Dhupa.

Locality. It is found growing in abundance on *Margs* above 10,000′ and is common in Chota Deosai, and in other places.

Description. It is a stemless perennial with large leaves cottony white above, tomentose beneath. The receptacle has stout bristles. Root stock long woody, aromatic.

Collection time. It is collected in summer and autumn.

Uses. The root forms the chief ingredient of *dhup* of commerce which is burnt as an incense in all Hindu house-holds and temples in Northern India, for which purpose it is in great demand.

> "The bruised root is applied to eruptions and a decoction is given in colic. It is also considered cordial and given in puerperal fever." (Dr. Stewart).

Market. The Chief market is Amritsar. The rate varies from Rs. 9/- to Rs. 12/- per maund. Large quantities of this drug have recently been imported into Amritsar from Chamba, Kulu, and Tehri Garhwal. The annual consumption in the Punjab and its adjoining provinces is about 800 to 1,000 maunds per annum. The drug has a bright future before it, if it is introduced in Southern and South-Western India.

PHYTOLACCA ACINOSA, Roxb.

N. O. PHYTOLACCACEÆ.

Vernacular Names. *Kash.*–Lubar, Lubar sag. Brand.

Parts Used. Leaves.

Locality. It is common in fir forests every where especially in Tangmarg, Gulmarg and Gurez.

Description. An erect perennial herb, stems 3′ to 5′ succulent, hollow inside. Leaves large, simple. Flowers white in an erect raceme at the top of the stem. Fruit succulent, black.

Uses. The leaves are poisonous, but the green leaves when young are eaten as a vegetable after cooking. It is said that complete boiling destroys the poisonous properties which produce delirium. The narcotic virtues of certain American species are well known and it is considered that the Indian species may equally be valuable. The leaves and roots are used to adulterate Belladonna with which they very closely resemble. The plant can however be easily distinguished by the structure of the stem and the form of flowers. In Kashmir, great care is taken in collecting Belladonna leaves and roots free of adulteration. Leaves and roots of Phytolacca if accidentally mixed with those of Belladonna are carefully picked out and seperated before the drug is stored.

PICRORHIZA KURROA, Benth.

BITTER ROOT.

N. O. SCROPHULARINEÆ. THE FIGWORT FAMILY.

Name. The generic name is from the Greek "Pikros", bitter, and "rhiza", a root. The specific name is from "Karu", the Punjabi name of the plant, which means bitter. The local name in Kashmir is "Kaur". *Panj.*— Karu. *Hind.*— Katki.

Locality. At 10—13,000′; e. g., Kolhoi, Zojpal and other *Margs*.

Description. A perennial with a stout, creeping rootstock, bearing tufts of simple leaves and leafless scapes terminating in dense, short racemes of small pale bluish flowers with very long protruding stamens. Rootstock stout, elongate, prostrate, creeping and branching, 6″—10″ in length. Leaves all from the rootstock in distant tufts 2″—5″ in length, obtuse, sharply serrate, narrowed below into a broad winged and sheathing petiole, rather leathery in texture with a shiny green glabrous surface. Flowers pale, blue-purple, in a dense terminal. Fruit an ovoid capsule ½″ in length.

Flowering season. July, August.

Uses. A valuable medicinal plant. The root and rootstock contains a bitter substance termed ***Picrorhizin***, a glucoside. The crude drug appears on the market in the form of short dry pieces of the root and rootstock of about 2″—3″ in length. The drug is used medicinally as a stomachic, tonic, and as a febrifuge in cases of fever.

> "From my experience of the root of P. Kurroa, I can say that it is a good stomachic and very useful in almost all forms of dyspepsia and in nervous pain of the stomach and bowels". (Moodeen sheriff).

The drug has been admitted in the Indian and Colonial addendum of the British Pharmacopœias.

Market. The chief markets are Amritsar and Calcutta. In Calcutta it is sold under the name of Kurroa *i. e.* Gentiana Kurroa. The price at Amritsar is Rs. 20/- to Rs. 30/- per maund. Kashmir Kaur is in much demand being considered of very good quality. The annual output is about 300 maunds.

PODOPHYLLUM EMODI, Wall.

INDIAN PODOPHYLLUM.

N. O. BERBERIDEÆ.

Vernacular Names. *Sans.*— Laghu Patra. *Hind.*— Papra, Papri. *Kash.*— Vanwangan *Guj.*—Bankakri.

Parts Used. Roots.

Locality. It is found growing all over Kashmir from 6,000′ to 10,000′. Specially in Fir forests. Common at Gulmarg and in Gurez.

Description. A perennial of 1′—2′ in height. Leaves with a long petiole, orbicular, 3—5 lobed to the middle or base. Flowers solitary white or pinkish white, which soon drop off. Fruit a berry, large, pulpy, bright red and very conspicuous. The fruit is eaten and has many white seeds enveloped in the pulp.

Properties and Uses. The root yields podophyllum resin, which is very popular in modern medicine. It is a powerful biliary purgative and its action somewhat corresponds to that of mercury, hence it is named " Vegetable calomel ".

The plant is very similar to the American species P. peltatum both in botanical and technical characters.

"It has been admitted that the Indian plant is richer in resin as well as in *Podophyllotoxin* than the American. From the results of the assay of American Podophyllum given by Dunstan and Henry it is calculated that the percentage of the active principle in the resin of the American plant ranges from 15·29 to 23·74. According to the analysis of a sample of the American drug by Umney, the active principle amounts to 22·9 per cent of the resin. In a sample of the Indian drug examined by him, in 1892, he found 25 per cent while in another sample collected after fruiting in 1910, he found 50·3 per cent. The percentage of *Podophyllotoxin* in the Indian resin varies according to the season of collection from 25 to 50 per cent, and it is safe to assert that an average quality of the Indian plant will contain as a rule twice as much of the active principle as the American.'' (Puran Singh)

Percentage of resin obtained from the plants varies from 7 to 20 per cent. Hooper *(Indian Museum Report 1910)* found about 14 per cent in samples from Kashmir. The American species give about 4 per cent resin.

Mr. Puran Singh. F.C.S., in his note on the resin value of P. Emodi is of opinion that percentage of resin in the rhizome diminishes as the root grows older in the season, but the active constituent in the resin concentrates. He thinks the best season for the collection of the root depends on whether a high percentage of the resin in the plant is required or the *Podophyllotoxin* in the resin is wanted. He thinks that the rhizome should be collected in May about the time when the plant is in flower.

Dr. Chopra of the Calcutta School of Tropical Medicine writes:—

> " This is one of the drugs which is largely exported from the Himalayas and its export is on the increase daily. The resin obtained from the specimen sent from Kashmir and the Indian root generally looks somewhat different from that of the imported drug, but physiologically it is quite as effective. The percentage of resin obtainable from the Kashmir rhizome is 10 to 12 per cent as compared with that of the foreign varities which contain only 3 to 4 per cent. The rhizome analysed is of excellent quality and the possibilities of manufacture of the resin on commercial scale would be worth considering ".

Market. The drug was in great demand some time ago and large quantities were put into the market which resulted in considerable reduction in price. Kashmir has been exporting large quantities of the drug to England. The drug is so plentiful in Kashmir that the total demand of the market can be met from Kashmir alone. The present market rate is Rs. 20/- per maund, ex-godown Baramulla.

Kashmir. Inferior qualities from other places are selling cheaper in Amritsar and other centres.

SAUSSUREA LAPPA, Clarke.

Syn. AUCKLANDIA COSTUS, Falconer.

APLOTAXIS LAPPA, Dcne.

APLOTAXIS AURICULATA.

THE COSTUS.

N. O. COMPOSITÆ.

Vernacular Names, *Sans.*—Kashmirja, Kushtha. *Pb. & Kash.*—Kuth, Chob-i-Qut. *Bengal.*—Pachak, Kur. *Bhote.*—Kusta. *Tamil.*—Putchuk, goshtam. *Telegu.*— Changala, Kastam. *Malay.*— Sepuddy. *Bombay.*-- Upalet. Supposed to be the **costus** of the ancients. (J. D. Hooker) .

Locality. The very sanskrit name *Kashmirja* which means "produced in Kashmir" denotes that Kashmir is the home of Kuth and even today its growth is limited to Kashmir. It is said to have been found growing naturally in the Kagan Valley of the North Western Frontier Province and the Pangi Ilaqa of Chamba State but only as a botanical specimen. Even if it grew there it has been made extinct by uncontrolled extraction. All Kuth that finds its way to the market otherwise than from Kashmir is smuggled Kuth which is removed from Kashmir through Kulu, Chamba, Hazara and the frontier districts. The chief places where it grows abundantly in Kashmir are the Kishenganga Valley from Tilel down to Karnah and the higher elevations of the Chenab Valley. It is also found sporadically in Reasi, Ramban and Udhampur Districts, between 8,000′ to 12,000′ in shady moist places, specially under birch trees aud dwarf willows.

Description. A tall stout perennial herb 5′ to 7′ in height with very large radical leaves which with petioles are 2′ to 3′ long. Flowering stem also robust with a cluster of several flower heads which are bluish black or quite black in colour.

Parts Used. The Root. The roots are dug up and cut into pieces, 3 to 4 inches long, which are artificially dried in the forest and then transported to the godowns at Baramulla, Kashmir.

Properties and Uses. Kuth has been used in Hindu medicine from the earliest ages. The Costus of the Greeks and Romans was a medicine held in high repute from the remotest antiquity.

U. C. Dutt in his Hindoo materia medica states that Kuth root is described as an aromatic, stimulant, and useful in cough, asthma, fever, dyspepsia and skin diseases.

It is used as an ingredient in stimulating mixtures for Cholera. It is also prescribed as a stomachic, tonic; for ulcers and in rheumatism, and is also considered depurative and aphrodisiac.

In China the root is used as an incense in Pagodas (Temples) and also as a medicine. In Kashmir it is used to purify water in wells and also as a preservative of woollen fabrics. The drug was extensively used in India in former times, but at present the consumption is very limited.

The drug has been tried for its pharmacological action and therapeutic properties at the Calcutta School of Tropical Medicine and the following conclusions have been arrived at:–

1. The active principles of S. Lappa are:–
(*a*) An essential oil. (*b*) A glucoside.
(*c*) An alkaloid.

2. The essential oil has strong antiseptic and disinfectant properties.

3. The glucoside causes a small but a persistent rise of blood pressure. The essential oil does this to a lesser degree.

4. Both the glucoside and the essential oil have a slight but a definite broncho-dilatory effect. The alkaloid is inactive in this respect.

5. The powdered root and the alcoholic extract are expectorant and are beneficial in Asthma. They cut down attacks and reduce their frequency.

Dr. Chopra has found the drug to be a specific for asthma.

Kuth is a plant of great economic value. Stewart in his book on Punjab plants published in 1864 states that in the year 1837 nearly 7,000 maunds of Kuth were exported from Calcutta to China. Even now about the same quantity is exported from Kashmir annually. The export of Kuth is a monopoly of the Kashmir Government and a special Kuth Regulation prohibits the unauthorized export or possession of any part of the plant.

Market. The chief market of Kuth is China, where it is exported via Calcutta and Hongkong. The price obtained for the next five years is Rs. 287/- per maund ex-godown Baramulla and 5,000 to 6,000 maunds are to be removed annually, by the contractor. In addition to this about 500 maunds are available for export to Europe and America at Rs. 290/- per maund. Prices at Amritsar range between Rs. 300/- and Rs. 350/- per maund. It is believed that the drug is retailed in China, at Rs. 450/- to Rs. 600/- per maund.

SKIMMIA LAUREOLA, Hook.

Syn. LIMONIA LAUREOLA, Wall.

N. O. RUTACEÆ.

Vernacular Names. *Hind.*—Barru. *Punj.*—Shalangli. *Kash.*—Patar, Ner.

Locality. Found in abundance at elevations of 7,000′—9,000′, as an undergrowth in fir forests. Very common in Gulmarg, Pahalgam and throughout the valley.

Description. A strongly aromatic, sweet-scented, evergreen, perennial shrub, 3′—5′ in height. Leaves simple, alternate, entire, glabrous, shortly petioled and gland-dotted. Flowers greenish-yellow, in short crowded terminal panicles. Fruit in clusters of bright, scarlet-red, fleshy drupes, containing 1—3 stones.

Flowering Season. May to June; but it frequently flowers again in the autumn.

Uses. The leaves are chiefly used by the Hindus in Kashmir as an offering in their religious ceremonies. The leaves and branches are also burnt as an incense. The odour of ***Kasturi*** obtained from musk-deer is popularly believed to be derived from the aromatic leaves of this plant.

A poisonous alkaloid known as ***Skimmianine*** has been found to be present in all the parts of the

Japanese variety, S. japonica. It is possible that the same alkaloid is present in S. laureola as well, but this has not been definitely ascertained yet.

The Department of Commerce and Industries of the Kashmir Government has lately been making experiments with the oil extracted from the leaves of Skimmia laureola. The Oil is distilled from fresh leaves and the yield amounts to about 0·5 %. It is being tried as a base in soap making. It has further been seperated into *Linalyl acetate* and *Linalol*. S. laureola is probably a new source from which both these contents can be obtained. *Linalyl acetate* present in the oil of S. laureola is of a very high order and amounts to about 45 % of the oil. It is a very costly perfume.

Market. The leaves are sold in the bazars in Kashmir. They have not been exported out of Kashmir, for the dry leaves would not yield the oil which is volatile. The oil is distilled while the leaves are fresh and green. The Department of Commerce and Industries is distilling the oil on a large scale which will be sent to Europe for experimental purposes.

There is a promise of the oil being used in soap making and perfumery and it is hoped that a market will soon be established for it. The oil shall have to be extracted in Kashmir.

TARAXACUM OFFICINALE. Wigg.

DANDELION ROOT.

N. O. COMPOSITÆ.

Vernacular Names. *Kash.*—Hand. *Hind.*—Dudal, Kanphul.

Locality. Common everywhere in meadows throughout the valley.

Description. A perennial herb which gives milky juice when broken. Leaves all radical, variable in shape. Heads solitary. Flowers bright yellow.

Uses. The root is officinal in the British Pharmacopœia, being alterative, tonic and cholagogue. The bitter principle *Taraxacin* and *Taraxacerin* are obtained from the roots. The roots contain gum, sugar and a large quantity of *inulin* a substance analogous to starch.

It is useful in dyspepsia, chronic hepitic affection and jaundice and is much used in liver complaints. In Kashmir green leaves are boiled and eaten with great relish as a vegetable and large quantities of the leaves are collected early in the spring and dried up for winter use. These are specially given to mothers just after child birth for a few days. In Holland the extract of Dandelion is a common remedy for intermittent fevers and agues so prevalent in that marshy country. In Germany the roots are cut into pieces, roasted and used as a substitute for coffee. A kind of beer is obtained by the fermentation of the plant in Canada.

Market. The demand of the Indian market is rather limited, but is gradually expanding. The root being very small the cost of collection is heavy. The present price at Baramulla godowns is Rs. 15/- per maund.

THYMUS SERPHYLLUM, Linn.

WILD THYME.

N. O. LABIATÆ.

Vernacular Name. Banajwain.

Locality. It is very common everywhere on waste lands, from 5,000′ to 9,000′, specially in Bandapur and Tangamarg.

Description. A small, slender, much branched shrub, very aromatic. Rootstock woody. Leaves usually nearly sessile, ⅛″ to ¼″, gland-dotted, ovate-oblong. Flowers small, purple, in small whorls, crowded in short terminal spikes. Nutlets nearly smooth.

Uses. It is used by the Hakims in weak vision and complaints of stomach and liver, suppression of urine and menstruation. The oil is applied as a remedy for toothache. In France a decoction of the plant has been used to cure the itch and other skin disorders. It has also been recommended for curing headache and the effects of intoxication.

It gives the Thyme of commerce. The plant is very common in Kashmir and can be collected in large quantities. Manufacture of Thyme from the plant has a bright future before it in Kashmir.

VALERIANA WALLICHII, D. C.

INDIAN VALERIAN.

N. O. VALERIANEÆ

Vernacular Names. *Hind.* and *Kash.*—Mushkbala, Bala. Sans.—Tagara.

Locality. Common all over between 6,000′ to 9,000′, in Gulmarg and other places.

Description. A pubescent, perennial herb. Rootstock thick horizontal. Radical leaves several, 1″—3″ diam. cordate ovate, usually acute and toothed. Flowers white or tinged with pink in a terminal corymb. Fruits hairy or nearly glabrous. Roots aromatic.

Uses: In chemical constitution the roots of V. Wallichii and those of the officinal drug resemble very closely, but the former has a more powerful odour and yields a large proportion of volatile oil and *valeric acid* on distillation with water.

It acts as a stimulant and antispasmodic; its use is indicated in nervous and hysterical symptoms. In India the powdered root is mixed with tobacco to give it a fragrant smell and taste. It is also used as an ingredient of *Hawan Samagri.*

The following note by Dr. R. N. Chopra of the School of Tropical Medicine, Calcutta, will be of interest.

> "The specimen sent was Valeriana Wallichii (V. Indica). The rhizomes were found to be very dry and brittle and appeared to have lost some of the essential oil which is the active principle and which is responsible for the Pharmacological action of the drug. On steam distillation of 200 grains of the above sample and shaking up the distillate with ether, evaporating off the ether only 0·31 per cent of the essential oil was obtained which was physiologically quite active.
>
> I am of opinion that if the rhizome is collected at the proper time, dried properly and carefully stored the yield of the essential oil would increase considerably. No standard has been laid down by the British or United States Pharmacopœias, as to the quantity of the essential oil the rhizome must contain, before it is authorized to be used for medicinal purposes. From the investigations I have carried out, I am of opinion that the valerian rhizome sent

from Kashmir would form an excellent substitute for imported root used by the druggists".

Market. The drug is exported to Amritsar and Cawnpore where it sells at Rs. 13/- to Rs. 15/- per maund. The drug exported from Kashmir being pure, clean and big in size is preferred to that exported from other places.

PART II.

A DETAILED LIST OF PLANTS OF ECONOMIC IMPORTANCE FOUND IN THE FORESTS OF JAMMU AND KASHMIR.

Natural Order

SCIENTIFIC NAME.	COMMON NAMES.
Clematis Gouriana, *Roxb.*	Budibel.
Anemone obtusiloba, *Don.*	Rattanjog, Padar.
Thalictrum javanicum, *Blume.*	Mamiri.
Caltha palustris, *Linn.*	Marsh Marigold, Mamiri, Baringu.
Aconitum lycotonum, *Linn.*	Bika.
Aconitum heterophyllum, *Wall.*	Atis, Patis.

Renunculaceæ.

LOCALITY.	PARTS USED AND THEIR USES.
Common near Matrigam on Gilgit Road and in the Kishenganga valley.	The leaves of the fresh stem if applied to the skin cause vesication.
Common from 6,000′ to 12,000′ every where. Khilan Marg, Gulmarg and Gosai.	Roots and seeds. *Anemonin* is found in the plant. The seeds used internally produce vomiting and purging. The oil expressed from them is used in rheumatism.
Common 6,000′ to 12,000′ Ramtakht, Vijnala.	The roots are used in Indian medicine.
In ponds and running water all over the valley, above 5,000′.	The root is considered poisonous.
5,000′ to 12,000′. Kashmir and Kishtwar.	The root yields the *aconite* of European commerce.
7,000′ to 13,000′, on high *Margs*.	The roots contain the alkaloid *Atisine*. Officinal in the Indian Pharmacopœia. Supposed to be tonic, antiperiodic and useful in dyspepsia.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Aconitum Chasmanthum, *Stapf.*	Mohri, *(Pb.)*. Banbalnag, (*Kash*.).
Adonis Chrysocyathus, *Hook.*	Nilemar.
Actæa spicata, *Linn.*	Baneberry. Richhbhilara.
Cimicifuga fœtida, *Linn.*	Junmar, Jiunti.
Pæonia Emodi, *Wall.*	The Himalayan pæoney or the pæoney rose. Udsalap, Mid, Marmekh, Mamekh.

Renunculaceæ. (*Contd.*).

LOCALITY.	PARTS USED AND THEIR USES.
Common between 7,000′ and 13,000′.	The root contains *Aconitine*. See page 1.
Common above Tragbal. Zojpal, Liddar Valley.	All parts. The drug is considered to be a fatal poison.
From 7-9,000′, in Fir forests; common at Gulmarg, Gorai and in Karnah-Drawa.	The roots are a powerful nerve sedative in neuralgia, rheumatic affections and the like. Said to be used in snake-bite, nervous diseases and rheumatic fevers in Canada.
From 7—12,000′. Gurez, Kanzalwan and Gulmarg.	The root has similar properties as actæa spicata and is used in rheumatic affections. It is used in Siberia to drive away flies and bugs. The roots contain *cimicifugin*.
From 7—10,000′, common in Lolab and near Chandanwari.	Tubers, flowers, seeds and roots. The tubers are used in uterine disorders, colic, bilious obstruction, dropsy, epilepsy, convulsions & hysteria. Officinal in the Pharmacopœia of India.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Tinospora cordifolia, *Miers.*	Gilo, Gulancha.
Cissampelos Pareira, *Linn.*	Akanadi. Nirbisi, (*Hind.*). Pahre, (*Dun.*). Ambashthai, (*Sans.*).
Natural Order	
Berberis vulgaris, *Linn,*	Kashmal, (*Pb.*). Chockchin, (*Kash.*).
,, aristata, *Dc.* ,, Lycium, *Royle.* ,, asiatica, *Roxb.*	Daruharidra (*Sans.*). Rasaunt, (*Hind.*). Indian barberry. Filzahrah, (*Per.*).
Podophyllum Emodi, *Wall.*	Ban-kakri, (*Hind.*). Van-wangan,(*Kash.*).

LOCALITY.	PARTS USED AND THEIR USES.
Menispermaceæ.	
Forests of Jammu Province at low elevations.	The stem yields *Gilo* which is officinal in Pharmacopœia of India. It is used in fevers and has tonic and alterative properties.
Lower ranges of Jammu Province upto 4,000′.	Roots, bark and leaves. The root is considered to be tonic, astringent and diuretic. Useful in fever, diarrhœa, urinary diseases and dyspepsia etc.
Berberideæ.	
Common all over, 6,000—8,000′. 3,000′-6,000′. Jammu Province.	The extract of the root, known as *Rasaunt*, is officinal and is commonly used in Indian medicine. It is antipyretic, antiperiodic, diaphoretic & tonic. The fruit is edible.
6000′ to 10,000′, common both in Jammu and Kashmir.	See Page 25.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Nymphæa alba, *Linn.*	The water lily. Bumposh, (*Kash.*). Nilofar, (*Pers.*).
Euryale ferox, *Salisb.*	Makhana, (*Hind.*). Juar, (*Kash.*).
Nelumbium speciosum, *Willd.*	Lotus. Pamposh, (*Kash.*). Kanwal, (*Hind.*). Kamala, (*Sans.*).
Natural Order	
Papaver Rhœas, *Linn.*	Gul-i-Lala. Lala.

LOCALITY.	PARTS USED AND THEIR USES.
Nymphæaceæ.	
The Dal and other lakes in the valley.	Root-stock is given in dysentery. Flowers are reputed to be anti-aphrodisiac and diaphoretic.
—do.—	The seed is considered to possess medicinal virtues such as restraining seminal gleet and invigorating the system. It is eaten roasted.
—do.—	The leaves are used as cool bed-sheets in high fever. The seeds are given as a diuretic and refrigerant. The petals are said to be a mild astringent. The root-stock is edible. Seeds are considered an antidote for poison.
Papaveraceæ.	
Common in wheat fields in the valley.	The milk from the capsules is narcotic and has slightly sedative properties.

Natural Order

SCIENTIFIC NAME.	COMMON NAMES.
Meconopsis aculeata, *Royle*.	Blue poppy, (*Eng.*). Kandeli, (*Pb.*). Gul-i-nilum, (*Kash.*).

Natural Order

Corydalis Govaniana, *Wall.*	Bhutkeshi.
Fumaria parviflora, *Lamk.*	The fumitory. Pitpapra, (*Hind.*). Shah-tara, (*Kash.*).

Natural Order

Sisysmbrium Irio, *Linn.*	Khubkalan (*Pers.*). Chari Lachhij,(*Kash.*).

LOCALITY.	PARTS USED AND THEIR USES.
Papaveraceæ.	(*Contd.*).
Above 11,000′ on open rocks. Razdhani, Gosai, Apharwat.	The root is considered to have narcotic properties.
Fumariacæ.	
8-12,000′, usually among boulders on stream banks. Gurai. Khillanmarg.	The root is used in syphilitic, scrofulous and cutaneous affections.
Common at all elevations upto 6,000′ in wheat fields.	The entire plant except the root is regarded as laxative, diuretic, alterative and tonic. Used as a blood purifier in skin diseases.
Cruciferæ.	
Common in the valley particularly on house roofs.	The seed is expectorant and restorative, also said to be a febrifuge.

SCIENTIFIC NAME.	COMMON NAMES.

Natural Order

Cratæva religiosa, *Forsk.*	Barna.

Natural Order

Viola serpens, *Wall.*	The wild Violet, Bunafsha.
Viola odorata, *Linn.*	Bunafsha.

Natural Order

Flacourtia Ramontchi, *L'Herit.*	Kakoa, Kavidi, Bilangra.

Capparideæ.

LOCALITY.	PARTS USED AND THEIR USES.
Lower hills of Jammu Province.	The bark is demulcent, antipyretic, sedative, alterative and tonic. Fresh leaves and root bark are rubefacient.

Violaceæ.

LOCALITY.	PARTS USED AND THEIR USES.
Everywhere in moist and shady woods.	The plant is used in Vedic and Unani medicine as a demulcent, diuretic and mild laxative.
All over above 5,000′.	The flowers are used in Vedic and Unani medicine, as a cooling agent and diaphoretic. *Violin* is obtained from this plant.

Bixineæ.

LOCALITY.	PARTS USED AND THEIR USES.
Fairly common in Karnah, Drawa and Jammu Province.	Seeds, gum, bark and fruit. Fruits are sweet appetising and digestive. Useful in jaundice and enlarged spleen.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Portulaca oleracea, *Linn.*	Khurfa, (*Hind.*). Khulfa, (*Kash.*).
Natural Order	
Althæa officinalis, *Linn.*	Marsh-mallow, Khutmi.
Malva sylvestris, *Linn.*	Khabazi.
Bombax Malabaricum, *D. C.*	Semul, Simmal.

LOCALITY.	PARTS USED AND THEIR USES.
Portulaceæ.	
All over the valley. Haran.	Commonly used in Unani medicine. Seeds are demulcent, astringent and diuretic. Leaves are refrigerant, astringent and emollient.
Malvaceæ.	
Cultivated all over Kashmir.	Flowers, carpels, leaves & roots. Used in Unani medicine as a suppurative and emollient.
Found in the valley.	All parts of the plant. Much used on account of its mucilaginous and cooling properties.
Below 2,500′. Common in Jammu and Billawar.	Gum, seeds, fruit, tap-root, bark, cotton and flowers. Gum known as *mocharas* is much used in diarrhœa, dysentery and menorrhagia. The root is known as *musla* and has stimulant and tonic properties attributed to it. The "cotton" is used in surgical cases as a substitute for cotton.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Lavatera Kashmiriana, *Camb.*	Kashmir Tall Mallow. Resha-Khutmi, Gul–i–Khera.
Natural Order	
Helicteres isora, *Linn.*	Maror Phali, (*Hind.*). Kisht—bar—Kisht, (*Pers.*).
Natural Order	
Geranium Wallichianum, *Sweet.*	Kao—ashud, (*Kash.*).
Geranium nepalense, *Sweet.*	*Roel*, (*Kash.*). Chaud, (*Pb.*).
Natural Order	
Peganum Harmala, *Linn.*	Harmal.

Malvaceæ. (*Contd.*).

LOCALITY.	PARTS USED AND THEIR USES.
7—9,000′. Abundant in Ferozpur Nalla near Gulmarg.	Flowers, leaves, roots and seeds are used for the same purpose as *Althæa officinalis*.

Sterculiaceæ.

Dry forests of Jammu Province.	Roots, fruit and bark. Used in dysentery and diarrhœa. A demulcent and mild astringent.

Geraniaceæ.

Common throughout Kashmir, 7–11,000′. Burzal, Gulmarg.	The root possesses astringent properties. Used as a cure for toothache.
Common in Kashmir.	The whole plant is used as an astringent and in certain renal diseases.

Rutaceæ.

Common on waste lands in Jammu Province.	The seeds yield a red dye. They also contain the alkaloids *Harmaline* and *Harmine*. The seeds are

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Dictamnus albus, *Linn.*	Burning Bush.
Zanthoxylum alatum, *Roxb.*	Timbar, Timru.
Skimmia laureola, *Hook.*	Ner, Patar, (*Kash.*).
Murraya Kœnigii, *Spreng.*	Drankol, Katnim, Gandla.

Rutaceæ. (*Contd.*).

LOCALITY.	PARTS USED AND THEIR USES.
	narcotic, anodyne and emetic. "No hospital should be without a drug so cheap and with so many good qualities as Hurmal". Dr. Moodeen Sheriff.
7—8,000′; frequent in Machhil and at Pahalgam.	Roots and bark are used in nervous diseases. They contain an essential oil.
2—4,000′. Common on J. V. road below Uri.	Seeds, bark and fruit are used in fevers, dyspepsia and cholera. Tooth brushes are made of the branches. Also employed to intoxicate fish.
7—9,000′. Abundant in fir forests. Gulmarg, Pahalgam and all over the valley.	The leaves are used by Hindus as a substitute for *Bel* leaves. An essential oil is extracted which is being tried in soap making and perfumery.
Found in Jammu Province.	Roots, leaves and bark. Used as stimulant, stomachic and tonic.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Ægle Marmelos, *Corria.*	Bel, Sriphal.
Natural Order	
Melia Azedarach, *Linn.*	Bakain, Drek. Persian Lilac.
Cedrela toona, *Roxb.*	Tun. Red cedar. Indian Mahogany.
Natural Order	
Zizyphus vulgaris, *Lamk.*	Unab, Singli.

Rutaceæ. (*Contd.*).

LOCALITY.	PARTS USED AND THEIR USES.
Lower forests of Jammu Province.	Unripe fruit is officinal in Pharmacopœia of India and is considered specific for chronic dysentery. Other parts of the tree are largely used in Vedic and Unani medicine.

Meliaceæ.

Planted on J. V. road and in the lower areas of Jammu Province.	Leaves, fruit, flowers and bark. Used in many diseases by Hakims. Considerably used in America for medicinal purposes.
Common in broad-leaved forests of Jammu Province.	The bark is a powerful astringent. The flowers yield a red dye. The wood is used for carving.

Rhamneæ.

Common in Muzaffarabad district upto 3,500′.	The fruit is regarded as suppurative, expectorant and blood purifier. A syrup made of the dried fruits is used for bronchitis.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Rhamnus virgatus, *Roxb.*	Chato, Chadua.
Natural Order	
Æsculus indica, *Colebr.*	Indian Horse-chestnut. Handun, Bankhor, Gun, Gugu.
Dodonæa viscosa, *Linn.*	Sanatha.
Natural Order	
Rhus Wallichii, *Hook.*	Arkhur.
Rhus succedanea, *Linn.*	Arkhur.

LOCALITY.	PARTS USED AND THEIR USES.
Rhamneæ.	(*Contd.*).
4,000′ to 7,000′. Frequent in all Pine forests. Chatternar, Ramban.	The fruit has purgative properties. Bark of this plant is being analysed to ascertain if it has any properties of *Rhamnus purshiana* which gives *Cascara Sagrada*.
Sapindaceæ.	
Common in Deodar and Pine forests in shady ravines.	The fruit is given to horses in colic. An oil extracted from the seeds is used in rheumatism.
Common below 3,000′. J. V. Road. Jammu.	The leaves are used in snake-bite and to heal wounds, burns and scalds.
Anacardiaceæ.	
Common in Deodar and Pine forests in shady places.	The juice and smoke of green parts blister the skin.
Found in the Jhelum and Kishenganga vallies.	The fruit is considered officinal and is used in the treatment of pthisis.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Pistacia integerrima, *Stewart.*	Kakarsingi.
Odina wodier, *Roxb.*	Jingan, Kaimul, Gadhambal,
Semecarpus anacardium, *Linn.*	Bhalawa, Bhilawa.
Natural Order	
Coriaria nepalensis, *Wall.*	Bankhoki, Sikki.
Natural Order	
Colutea arborescens, *Linn.*	Braa. The Bladder Senna.

Anacardiaceæ (*Contd.*).

LOCALITY.	PARTS USED AND THEIR USES.
In the lower ranges of the Jammu Province.	The galls are used as a tonic and in coughs, pthisis, asthma and fevers.
—do.—	The leaves, bark and gum are used both in Indian and English medicine; in eruptions and ulcerations.
—do.—	Fruit. One of the few drugs that are useful in a variety of ailments. The use of the drug in paralysis is especially noteworthy. The juice of the pericarp is used as "marking ink".

Coriariæ.

Found in the Kishenganga valley.	The leaves act as poison in large doses. They are used to adulterate *senna*. The fruit also has medicinal properties.

Leguminosæ.

Ladakh.	The leaves are used as a purgative.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Ougeinia dalbergioides, *Benth.*	Sandan, Sannan.
Desmodium tiliæfolium, *G. Don.*	Chamkal, Gurkatch.
Abrus precatorius, *Linn.*	Ratti, Kunch, Ratak.
Butea frondosa, *Roxb.*	The Forest flame. Palah, Dhak, Chichra.
Dalbergia Sisoo, *Roxb.*	Shisham. (*Hind.*). Talee, (*Pb.*).

Leguminosæ. *(Contd.).*

LOCALITY.	PARTS USED AND THEIR USES.
Sub-mountain tracts of Jammu and Jasrota.	The bark is used as a febrifuge. The gum is used in dysentery.
Found all over Kashmir.	Roots are considered carminative and tonic and are used in bilious complaints.
Mirpur Forests.	Seeds, roots and leaves are used in various diseases. Seeds taken internally by women prevent conception. The beautiful red seeds are used as a unit for measuring gold.
Common in Jammu Province.	The gum is known as gum-kino or Bengal-Kino and is used in medicine. Flowers are used in dying silk and cotton.
Lower hills of Jammu Province.	Roots are said to be astringent. A decoction of the leaves is given in gonorrhœa. The timber makes nice furniture.

Natural Order

SCIENTIFIC NAME.	COMMON NAMES.
Cassia Fistula, *Linn.*	The Indian Laburnum, (*Eng.*). Amaltas, (*Hind.*).
Bauhinia Vahlii, *W. & A. Prodr.*	Blungar.
Acacia arabica, *Willd.*	Kikar.
Acacia catechu, *Willd.*	Khair.
Acacia modesta, *Wall.*	Phalah, Phulai.

LOCALITY.	PARTS USED AND THEIR USES.
Leguminosæ.	(*Contd.*).
Common in deciduous forests of lower hills.	The pulp, root-bark, flowers, stem bark, leaves and roots. Officinal in both Pharmacopœias. Chiefly used as a purgative.
—do.— —do.—	Seeds are tonic. Leaves are used to make cups (*Duna*) and plates (*Patal*).
Common in the low hills of Jammu Province.	The bark, gum, leaves, seeds and pods. Used in Indian medicine for various diseases.
—do.— —do.—	Catechu (*Katha*) obtained from the wood is used as a medicine and is officinal in both Pharmacopœias. It is extensively used as a dye stuff and is eaten with betel leaf.
—do.— —do.—	The tree yields a gum which is regarded as restorative. The green twigs are used as a tooth brush.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Prunus Armeniaca, *Linn.*	Apricot, Hari, Khubani, Cher, (*Kash.*).
Prunus Padus, *Linn.*	Bird-cherry. Zum, Bharath, Chrain.
Prinsepia utilis, *Royle.*	Banduch, Bhargan, Palwari.
Geum elatum, *Wall.*	Gogjimul.
Potentilla nepalensis, *Hook.*	Rattanjot.

Rosacæ.

LOCALITY.	PARTS USED AND THEIR USES.
From 3,000′ to 6,000′ in dry localities.	The kernals called Khasta are exported in large quantities to the Plains and are used as almond kernals. These are of sweat and bitter varieties.
5,000′ and above. Common everywhere.	The fruits yield a poisonous oil like the oil of almonds, much used in medicinal preparations.
Found on the lower hills.	Fruits are used in rheumatism. Oil expressed from seeds is used for food.
In moist places above 10,000′ Common in Gosai and at Apharwat.	The root is commonly used as an astringent and antiseptic.
In moist places at about 8,000′; at Dudi in Machhil with purple flowers.	The roots are used externally in Unani medicine, the ashes being applied with oil to burns.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Saxifraga ligulata, *Wall.*	Zakhm-i-Hayat. Silphara.
Natural Order	
Terminalia Chebula, *Retz.*	Harar, Harir.
Terminalia belerica, *Roxb.*	Bahera.
Natural Order	
Eugenia Jambolana, *Lam.*	Jaman, (*Hind.*). Jamanu, (*Pb.*).
Natural Order	
Woodfordia floribunda, *Salisb.*	Dhawi.

LOCALITY.	PARTS USED AND THEIR USES.
Saxifragaceæ.	
On wet stones above 9,000′. Common in Gosai.	The root is used as a tonic and is also applied on boils.
Combretaceæ.	
Lower Ranges of Jammu Province.	Fruits called the *Chebulic* and *Beleric myrobalans* are well known.
Myrtaceæ.	
Common in the plains of Jammu Province.	The bark and fruits are astringent. A vinegar from ripe fruits is used as stomachic and carminative. It is also given in cases of enlargement of spleen in advanced stages. The seeds have recently been used in diabetes.
Lythraceæ.	
Upto 2,500′. Common near Muzaffarabad.	Flowers and leaves are astringent, tonic and stimulant. The flowers are used as a dye.

Natural Order

SCIENTIFIC NAME.	COMMON NAMES.
Punica granatum, *Linn.*	Anar, Daruni, Daru.

Natural Order

Datisca cannabina, *Linn.*	Akalbir, (*Pb.*). Woftangal, (*Kash.* .)

Natural Order

Hydrocotyle asiatica, *Linn.*	Burmi, Brahmi booti.
Eryngium cæruleum, *Bieb.*	Dhudhali, Mithua, Kandu, Pahari gajar. Nur Alam, (*Pb.*). Shakakulmisri, (*Arb.*).

LOCALITY.	PARTS USED AND THEIR USES.
Lythraceæ.	(*Contd.*).
Common on warm slopes upto 5,500′. Near Uri on the J.V. Road. Ajjas.	Rootbark is astringent and is given to pass on tape-worm, Fruit is eaten. The rind of the fruit is used as a tannin.
Datiscaceæ.	
Frequent in moist places. Haran Plantation.	Roots and bark are bitter and purgative, used in fevers and also as a dye to colour wool.
Umbelliferæ.	
Everywhere in moist grassy places at low elevations. Jammu Province.	The leaves are officinal in the Indian Pharmacopœia and are described as alterative, tonic and local stimulant. The leaves are famous for improving memory.
Kashmir in grassy lands.	The root is a nervine tonic.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Carum Carui, *Linn.*	Zira, Zirah siyah, Caraway, (*Eng.*).
Angelica glauca, *Edgw.*	Chora, Chura.
Ferula species.	Hing.
Natural Order	
Hedera Helix, *Linn.*	Hari-bumbal.
Natural Order	
Sambucus ebulus, *Linn.*	Gandal, Ganula.

Umbelliferæ. (*Contd.*).

LOCALITY.	PARTS USED AND THEIR USES.
Astore, Drawa, Gurez on grassy lands.	The aromatic seeds are carminative and astringent, and are chiefly used as a spice.
At about 9,000′, in moist places. Frequent in Drawa.	The roots are used as a spice by Gujjars. It was formerly used in Europe as a medicine.
Kishtwar, Astore.	The gum resin is used as a condiment, also in medicine.

Araliaceæ.

Common in moist Fir forests as a climber.	Dry leaves are used to stimulate sores and berries as a purgative.

Caprifoliaceæ.

Common above 9,000′ in Fir forests. An undesirable weed with yellow or red berries.	The roots and leaves have purgative properties and are also used in dropsy. Leaves and flowers are used in rheumatism and cold. The drug is a common

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Natural Order	
Rubia cordifolia, *Linn.*	Majith.
Randia dumetorum, *Lamk.*	Rara.
Natural Order	
Nardostachys Jatamansi, *Dc.*	Balchar, Jatamasi.
Valeriana officinalis, *Linn.*	Jal-lakri, Kala bala.
Valeriana Wallichii, *Wall.*	Mushkbala.

LOCALITY.	PARTS USED AND THEIR USES.
	Caprifoliaceæ. (*Contd.*).
	country medicine in England.
	Rubiaceæ.
Round hedges above 5,000′. Chatternar, Gurai.	The roots are considered astringent. They are more commonly used as a colouring matter.
Upto 3,000′ in Jammu Province.	The bark and the fruits are used in rheumatism and other diseases. The fruit is a fish poison.
	Valerianeæ.
Common in high grazing grounds.	The roots are used as a nervine tonic and aromatic adjunct in Hindu medicine.
Sonamarg, Kanzalwan and Gurez.	The roots are officinal, being antispasmodic and stimulant.
Common in fir forests. Gurez.	Indian Valerian. See page 36.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Dipsacus inermis, *Wall.*	Uppalhak.
Natural Order	
Inula racemosa, *Hook.*	Pushkar (*Kash.*). Zanjabil-i-Shami (*Pers.*).
Inula grandiflora, *Willd.*	—do.—
Achillea millefolium *Linn.*	Momadra, Chopandiga, (*Kash.*). Milfoil or Common yarrow.
Artemesia maritima, *Linn.*	Tithwen, (*Kash.*). Afsantin, (*Pers.*). Wormseed, (*Eng.*).

LOCALITY.	PARTS USED AND THEIR USES.

Dipsaceæ.

Common every where between 7,000′ and 10,000′.	The leaves are boiled in water and this water is used in washing the swollen parts. Also cooked as a vegetable.

Compositæ.

7—9000′. Common in Gurez.	See page 18.
—do.—	Collected along with the roots of Inula racemosa and used for the same purpose.
6,000′ to 9,000′.	Leaves and flower heads are given to children in cold. Formerly much used in England. *Achillein*, *Achilletin*, *Ivain* and *Moschatine* are obtained from this plant.
Very common in Gurez.	See page. 4.

Natural Order

SCIENTIFIC NAME.	COMMON NAMES.
Artemesia vulgaris, *Linn.*	Tithwen. Afsantin.
Artemesia Absinthium, *Linn.*	—do.—
Senecio Jacquemontianus, *Bentham.*	Hater Mool. (*Kash.*).
Saussurea Lappa, *Clarke,*	Kuth, (*Kash.*). Chob-i-Qut, (*Pers.*).
Saussurea sacra, *Edgew.*	Jogi–padshah, (*Kash.*).

Compositæ. (*Contd.*).

LOCALITY.	PARTS USED AND THEIR USES.
At about 5,500′. Very Common in Srinagar.	A decoction of the leaves is given as a vermifuge.
Gurez, also above Pahalgam on high level margs only.	The whole plant is an aromatic tonic and is used in the form of decoction, infusion and poultice. *Absinthin* is obtained from the leaves.
On high elevations; Gosai, Datiwas, also on marshy places above 5,500′.	The roots are used in skin diseases.
High elevations, 9,000′ to 12,000′.	See page 28.
Above 13,000′, usually near glaciers on the way to Warwan from Sonasar. Very rare.	It is called the king of plants of the Yogis (Holymen). A decoction of the root in milk is supposed to be a great remedy in snake bites, plague and all ailments of women on the upper part of the body.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Jurinea macrocephala, *Benth*.	Dhup, Dupa, Gugal.
Taraxacum officinale, *Wigg*.	Dudhal, Kanphul, Hand, (*Kash*.). Dandalion, (*Eng*.).
Natural Order	
Codonopsis ovata, *Benth*.	Ludut.
Natural Order	
Pieris ovalifolia, *D. Don*.	Arwan, Ailor, Ayar.
Rhododendron arboreum, *Sm*.	Chhan, (*Hazara*). Chacheon, Chiu, (*Pb*.).
Rhododendron companulatum. *Don*.	Inga, (*Guj*.). Gaggar, (*Kash*.).

LOCALITY.	PARTS USED AND THEIR USES.
Compositæ.	*(Contd.).*
Common on high elevation grass lands.	See page 21.
Common everywhere in the valley.	See page 34.
Campanulaceæ.	
Common on slopes, above 9,000′. Choorwan and Kamri in Gurez.	The roots and leaves are used as poultice for bruises, ulcers and wounds.
Ericaceæ.	
Low hills of Jammu Province.	The young leaves and buds are poisonous to goats. Used to kill insects and applied to cutaneous diseases.
Lower elevations in Jammu Province.	The young leaves are poisonous but are applied to fore-head in head-ache.
Above 9,000′ at Mohanmarg, Zojpal.	The leaves are poisonous to goats. Said to be useful

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
	Nichni.
Rhododendron Anthopogon, *D. Don.*	Talis-far, (***Kash.***).
Natural Order	
Plumbago zeylanica, *Linn.*	Chitra, Chita, (*Hind.*). Agni-Shikha, (*Sans.*).
Natural Order	
Myrsine africana, *Linn.*	Babreng.
Natural Order	
Jasminum humile, *Linn.* Jasminum officinale, *Linn.*	Chambeli, (*Hind.*). Hi, (***Kash.***). Jai, (*Panj.*).

LOCALITY.	PARTS USED AND THEIR USES.
Ericaceæ.	(*Contd.*).
and Apharwat.	in chronic rheumatism, syphilis and sciatica.
Above 10,000′. Common at Apharwat.	The leaves are considered to have stimulant properties. Leaf smoke is useful in some diseases.
Plumbagineæ.	
Mirpur side on low hills.	The roots are used to increase digestive power and to promote appetite. Useful in many other diseases.
Myrsinæ.	
Lower hills upto 3,000′.	The fruit is used as an anthelmintic for tape-worm; also as a laxative. The gum has also medicinal uses.
Oleaceæ.	
5,000′ to 8,000′. Common everywhere.	The root is useful in ringworm. The milky juice of the bark is also used in medicine.

Natural Order

SCIENTIFIC NAME.	COMMON NAMES.
Fraxinus floribunda, *Wall.*	Hum, Sum, (*Kash.*). Sinnu, (*Jam.*). Ash, (*Eng.*).
Olea cuspidata, *Wall.*	Kohu, Kao.

Natural Order

SCIENTIFIC NAME.	COMMON NAMES.
Holarrhena antidysenterica, *Wall.*	Indar–jao, Kurchi.
Nerium odorum, *Soland.*	Ganira, (*Panj.*). Kaner, (*Hind.*). Khar-zahrah, (*Pers.*).

Oleaceæ. *(Contd.)*.

LOCALITY.	PARTS USED AND THEIR USES.
Frequent on Nalla banks above 6,000′.	An exudation collected by incising the stem is used as a substitute for officinal *manna*. (Watt).
Common below 3,000′. Below Garhi on the J. V. Road; Ramban.	An oil is expressed from the fruits which is used as a rubefacient. Leaves and bark are bitter and astringent. The wood makes excellent tool-handles. European varieties have been grafted and they now give excellent olives and olive oil.

Apocynaceæ.

LOCALITY.	PARTS USED AND THEIR USES.
Lower Ranges of Jammu.	The bark is a sure remedy for dysentery. Seeds are used in fever, piles and bowel complaints.
Very common, in Jammu Province.	The plant is poisonous. *Oleandrine* and several other active principles are found in

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Natural Order	
Calotropis gigantea, *R. Br.*	Ak. Madar.
Natural Order	
Gentiana Kurroo, *Royle.*	Nilkanth, (*Kash.*). Nilakil, (*Pb.*).
Gentiana decumbens, *Linn.*	
Swertia Chirata, *Ham.*	Chirayata.

Apocynaceæ. (*Contd.*).

LOCALITY.	PARTS USED AND THEIR USES.
	the plant. The roots are externally used in skin diseases.

Asclepiadeæ.

In sandy places at low elevations.	Roots, bark, leaves, juice and flowers. Used as an emetic, diaphoretic, alterative and purgative. The plant has extensive uses in Indian medicine.

Gentianaceæ.

6,000′ to 10,000′. Above Pahalgam. Gurez.	The root is a bitter tonic and is used as a substitute for true gentian.
Above 11,000′ at the head of Gosai nalla and Hanthi nalla in Gurez. Also in Baltistan.	A tincture prepared from the plant has been used as a stomachic.
Mirpur and Reasi in the Jammu Province.	The plant is officinal in the Indian Pharmacopœia and is considered tonic, stomachic

Natural Order

Natural Order

SCIENTIFIC NAME.	COMMON NAMES.
Cordia Myxa, *Linn.*	Lasura.
Macrotomia Benthami, *Dc.*	Gaozaban, (*Pers.*). Kahzaban, (*Kash.*).
Onosma echiodes, *Linn.*	Rattanjot.
Lindelofia longiflora, *Benth.*	Bhangra-siyah.

LOCALITY.	PARTS USED AND THEIR USES.
Gentianceæ.	*(Contd.).*
	and febrifuge. S. purpurascens, *Wall.* and S. paniculata, *Wall.* are used as substitutes for true Chirayata.
Boragineæ.	
Mirpur and Kathua in Jammu Province.	The bark is used in catarrh and the ripe fruit in decoction for fevers. The fruit is pickled.
Above 10,000′, frequent in Gurez, also in Chota Deosai.	The plant is used in diseases of tongue and throat. Extensively used in Kashmir by Hakims in fever.
Mirpur in Jammu.	Bruised roots are applied to eruptions. Leaves are alterative and flowers are used as a cordial and stimulant in rheumatism.
8,000′ to 11,000′. Burzal, Zojpal.	The fruit is used in Vedic medicine. Much praised by *Sanyasis*.

Natural Order

SCIENTIFIC NAME.	COMMON NAMES.
Ipomœa hederacea, *Jacq.*	Kaladana.
Cuscuta reflexa, *Roxb.*	Akashbel, (*Hind.*). Aftimun, (*Pers.*). Kukilpot, (*Kash.*).

Natural Order

Solanum dulcamara, *Linn.*	Inab-us-salib, (*Pers.*). Kambaya, (*Kash.*).
Atropa Belladonna, *Linn.*	Ban Tamaku, (*Pb.*). Mait-brand, (*Kash.*).
Datura stramonium, *Linn.*	Dhatura.

LOCALITY.	PARTS USED AND THEIR USES.
Convolvulaceæ.	(*Contd.*).
Lower levels in Mirpur and Muzaffarabad.	Seeds are used as a purgative. The drug has been introduced in English medicine.
Common everywhere on shrubs in waste lands and on willows in Dal lake.	The plant is considered useful in bilious disorders. The seeds are regarded as carminative.
Solanaceæ.	
Common in the valley.	The leaves and fruits are officinal in both Pharmacopœias.
7,000′ to 10,000′. Common in Deodar forests.	See page 6.
On waste lands at about 5,500′. Chatternar.	Officinal in both Pharmacopœias. Used for Asthma.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Datura fastuosa, *Linn.*	Kala Dhatura.
Hyoscyamus niger, *Linn.*	Ajwain Khurasani. Henbane.
Natural Order	
Verbascum Thapsus, *Linn.*	Gidar Tamaku, (*Hind*). Revand Chini, (*Pb.*). Great Mullein, (*Eng.*).
Picrorhiza Kurroa, *Benth.*	Kaur.
Pedicularis pectinata, *Wall.*	Mishran, (*Pb.*).
Pedicularis siphonantha, *Don. Prod.*	

LOCALITY.	PARTS USED AND THEIR USES.
	Solanaceæ. *(Contd.)*.
Mirpur in Jammu Province.	Seeds are poisonous, *Scopolamine* is the chief alkaloid, present in all parts of the plant.
Common near village lands.	See page 16.
	Scrophularineæ.
Mirpur in Jammu Province.	Seeds are narcotic and are used to poison fish. The plant is said to be useful in consumption.
10—13000′. Kolhoi, Zojpal.	See page 23.
7,000′ to 13,000′. Razdhani, Gosai and Gulmarg.	The plant is officinal at Lahore.
8,000′ to 13,000′ on marshy places, Gurez, Gosai, Gulmarg.	Some parts of this plant are used officinally in the Punjab.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Amphicome Emodi, *Lindl.*	Kaur Kashmiri.
Natural Order	
Adhatoda Vasica, *Nees.*	Bhenkar, Bhaikar.
Natural Order	
Vitex negundo, *Linn.*	Bana, (Pb.). Nirgundi, (Sans.).
Natural Order	
Ocimum sanctum, *Linn.*	Tulsi.
Colebrookia oppositifolia, *Smith.*	Bansa, Kala Bansa.

LOCALITY.	PARTS USED AND THEIR USES.
Bignoniaceæ.	
On rocks along the J. V. Road.	Roots and stem are used in fevers in place of Chirata.
Acanthaceæ.	
Common below 2,500′.	All parts of the plant are used in medicine. A well known remedy for coughs, Asthma and pthysis. Also an antiseptic.
Verbenaceæ.	
Common upto 2,500′. Muzaffarabad and Jammu Province.	Roots are tonic, febrifuge and expectorant. Leaves are used as a poultice.
Labiatæ.	
Mirpur and other hotter parts.	The plant has various medicinal properties. The leaves prevent malarial fevers by preventing entry of mosquitoes.
Jammu Province upto 2,500′. Common in Muzaffarabad.	The leaves are applied to wounds and bruises and the roots in epilepsy.

Natural Order

SCIENTIFIC NAME.	COMMON NAMES.
Mentha arvensis, *Linn.*	Podina Jangli.
Thymus Serphyllum *Linn.*	Ban Ajwain.
Salvia moorcroftiana, *Wall.*	Kali-jari, Gurgumna, (*Pb.*).
Nepeta elliptica, *Royle.*	Tukham Malanga, (*Pb.*).
Nepeta ciliaris, *Benth.*	Joofa, Zufa Zabis. (*Pb.*).
Nepeta ruderalis, *Hamilt.*	Niazbo, Billi-lotan,(*Pb.*).

Labiatæ. (*Contd.*).

LOCALITY.	PARTS USED AND THEIR USES.
Very common everywhere, in marshy places, Haran Plantation, Gurez.	Dried leaves are refrigerant, stomachic and diuretic. Green leaves eaten stop vomiting. Useful in jaundice.
Very common in the side valleys of Kashmir.	The plant yields Thymol. Seeds are used as vermifuge. Also used in complaints of stomach and liver.
Common on dry waste lands everywhere, 6,000′–9,000′. Srinagar, Chatternar.	Roots are used in coughs, seeds in hæmorrhoids and leaves in guinea-worm and itch.
5,000′ to 8,000′. Haran Plantation.	Seeds are used in dysentery.
Common between 6000′ and 8000′.	A *Sherbet* made from flowers and seeds is given in coughs and fevers.
Common on road sides	Leaves and flowers are

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Brunella vulgaris, *Linn.*	Ustakhadus, (*Pers.*). Self heal, (*Eng.*). Kal vioth, (*Kash.*).
Ajuga bracteosa, *Wall.*	Jan-i-Adam, Nil-Kanthi.
Natural Order	
Boerhaavia diffusa, *Linn.*	Punarnava, Sothagni.

Labiatæ. (*Contd.*).

LOCALITY.	PARTS USED AND THEIR USES.
upto 4,000′. Also planted in houses.	used in fevers. Said to be used in Nepal internally in gonorrhœa.
Common in the valley ascending upto 10,000′.	Green leaves are applied in painful piles over anus. Flowers are made into a ***Khamir***, said to be useful for headache.
Upto 7,000′. Common everywhere. Drawa, Srinagar.	The leaves are pounded and boiled in water; this water is distilled and drunk with a little salt to purify blood.

Nyctaginæ.

Lower hills of Jammu province.	The herb is used in jaundice, urinary and other diseases. The root has been found useful in bronchitic asthma.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Achyranthes aspera, *Linn.*	Apamarg, Phut-kanda, The prickly chaff flower.
Natural Order	
Phytolacca acinosa, *Roxb.*	Lubarsag.
Natural Order	
Polygonum polystachyum, *Wall.*	Khata-sag, Khatnari, (Guj.).
Polygonum Alpinum, *All.*	
Rheum emodi, *Wall.*	Revand, Revand-i-chini. Rhubarb, (Eng.).

LOCALITY.	PARTS USED AND THEIR USES.
Amarantaceæ.	
Lower Ranges upto 3,000′, on waste lands.	A drug much used in India. It is said to be useful in snake-bites, scorpion–bites and hydrophobia. Has also proved useful in hysteria.
Phytolaccaceæ.	
Common in Deodar and Fir forests.	See page 22.
Polygonaceæ.	
Common on southern slopes upto 8,500′. Gulmarg.	When young the plant except the root is cooked and eaten. Good for liver.
Elevations 7,000′ to 11,000′. Gulmarg, Pahalgam.	The leaves are used as a vegetable by hill people.
Frequent in Gurez.	The root is a mild purgative and has stomachic, tonic and cathartic properties.

CISENTIFIC NAME.	COMMON NAMES.
Natural Order	
Litsea sebifera, *Pers.*	Maida-sak.
Natural Order	
Daphne oleoides, *Schreb.*	Kutelal.
Natural Order	
Elæagnus umbellata, *Thumb.*	Kankoli, Gain, (M'abad.).
Natural Order	
Euphorbia Thompsoniana, *Boiss.*	Hirvi.

LOCALITY.	PARTS USED AND THEIR USES.
Laurineæ.	
Lower Ranges of Jammu.	The bark is a popular drug and is used in bruises; also as an astringent. Oil from leaves is used as a purgative.
Thymelæceæ.	
Common upto 6,000′. On hotter slopes. Chatternar, Baramulla.	A poisonous shrub. The berries if eaten produce nausea and diarrhœa. The leaves are used in gonorrhœa.
Elaeagnaceæ.	
Upto 4,000′. Frequent in Karnah.	The flowers are said to be astringent, Seeds are used in coughs and an oil expressed from them is used in pulmonary diseases.
Euphorbiaceæ.	
Common above 7,000′, everywhere in Kashmir.	The root is sometimes used to adulterate "Kuth". It is also used for washing the hair and as a purgative.

Natural Order

SCIENTIFIC NAME.	COMMON NAMES.
Buxus sempervirens, *Linn.*	Chikri.
Phyllanthus Emblica, *Linn.*	Amla. Anwla.
Baliospermum axillare, *Blume,*	Japolota, Jamalgota.
Mallotus philippinensis, *Muell.*	Kamila, Kamala.

Euphorbiaceæ. (*Contd.*).

LOCALITY.	PARTS USED AND THEIR USES.
5,000′ to 9,000′. Udhampur and Mirpur.	The wood is diaphoretic; leaves bitter and purgative; useful in syphilis. Bark-tincture is used as a febrifuge. The wood is very close grained and is used in making measuring scales and other fine articles.
Lower Ranges of Jammu Province.	Fruit, flowers, leaves and bark. The juice of the fruit is cooling, refrigerant, diuretic and laxative. The fruits are pickled and are also used as a tanning material. The bark and the leaves are also used in medicine.
Common as a hedge plant in lower Ranges.	Seeds are used as a very strong purgative.
Very common in the lower Ranges.	The red powder on the fruit is known as Kamila powder and is used as an anthelmintic, vermifuge and purgative.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Ricinus communis, *Linn.*	Arind, Harind.
Natural Order	
Haloptela integrifolia, *Planch.*	Papri.
Celtis australis, *Linn.*	Kharg, Batkarar, (*Pb.*). Brimij, (*Kash.*).
Cannabis sativa, *Linn.*	Bhang.
Morus alba, *Linn.*	Tut, Tulkul.
Ficus bengalensis, *Linn.*	Bor, Bar.

LOCALITY.	PARTS USED AND THEIR USES.
Euphorbiaceæ.	*(Contd.).*
Mostly cultivated in the lower parts of Jammu Province.	The seeds are officinal in both Pharmacopœias, and its uses are too well known to be mentioned.
Urticaceæ.	
In the lower Ranges of Jammu Province.	The bark is used in rheumatism.
Common upto 6,000′.	The fruit is used in amenorrhœa and colic.
Common everywhere.	The leaves and seeds are officinal in both Pharmacopœias.
—do.— —do.—	The fruit is edible. The juice of the fruit is used for sorethroat. Silkworm is reared on the leaves. The wood is used in making sports articles.
Common in Jammu Province.	Various parts of the tree are used in various ailments by Vaids and Hakims.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Platanus orientalis, *Linn.*	Chinar, (*Pers.*). Buin, (*Kash.*).
Natural Order	
Juglans regia, *Linn.*	Akhrot, (*Hind.*). Dun, (*Kash.*).
Natural Order	
Betula utilis, *Don.*	Bhojpatra, (*Hin*). Burza. (*Kash.*).

LOCALITY.	PARTS USED AND THEIR USES.
Platanaceæ.	
Cultivated all over the valley.	The bark is given in diarrhœa and dysentery. The leaves are used in ophthalmia. The wood makes beautiful furniture.
Juglandaceæ.	
Common in Kashmir.	The bark is used as an anthelmintic. It is also used as a tooth cleaner popularly known as "Dandasa". Seeds are eaten raw and the oil obtained from them is used in cooking. Walnut wood is used for making gun stocks and for wood carving.
Cupuliferæ.	
7,000′ to 11,000′. High altitudes in Kashmir.	The bark which exfoliates in large sheets and is waterproof is extensively used in Kashmir as a roofing and packing material. A decoction of the bark is used as a carminative and is prescribed in hysteria.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Quercus incana, *Roxb.*	Banj, Rin.
Corylus Colurna, *Linn.*	Thangi, Urni, (*Pb.*). Virin, (*Kash.*).
Natural Order	
Salix Caprea, *Linn.*	Bed Mushk.
Salix alba, *Linn.*	Bed, (*Pb.*). Vir, (*Kash.*).

Cupuliferæ. *(Contd.)*.

LOCALITY.	PARTS USED AND THEIR USES.
8,000′ to 10,000′ in Jammu Province.	The acorns form the medicine known as *balut*. They are used in gonorrhœa and other diseases. The wood is used for making agricultural implements.
Common in Kashmir forests. 7,000′ to 10,000′.	The fruit is edible and is mixed with walnut kernals to express oil. Medicinally it is considered tonic.

Salicineæ.

Cultivated in Kashmir.	An *Arq* distilled from the flowers is highly valued as a medicine being cordial, stimulant and aphrodisiac. The leaves are used in fevers. The wood, bark and gum are also used medicinally.
Very common throughout the valley.	The wood forms the main source of fuel supply in Kashmir. It is also used to make cricket bats. Leaves

Natural Order

Populus nigra, *Linn.*	Frast, (*Kash.*).
Populus ciliata, *Wall.*	Bagnu, (*Pb.*).
Populus alba, *Linn.*	Safeda, (*Hind.*).

Natural Order

Ephedra vulgaris, *Rich.* syn. E. gerardiana, *Wall.*	Asmani buti, Soma, (*Gurez*).

Natural Order

Juniperus communis, *Linn.*	Yethru, Vithar, (*Kash.*).
Juniperus recurva, *Ham.*	Vithar.

Salicineæ. (*Contd.*).

LOCALITY.	PARTS USED AND THEIR USES.
	are used medicinally. The bark yields *Salicin.*
5,000′—8,000′. Common in Kashmir, Kishenganga valley and Kishtwar.	The poplar is a magnificient road side tree. The wood is used in cheap construction and as fuel. It also makes good match splints. The leaves are said to have tonic properties.

Gnetaceæ.

4,000′ to 9,000′. Common on rocky places Dhattamulla. Kamri (Gurez).	Ephedrine is extracted from the plant. It is used in muscular and articular diseases. The plant is the *Huma* of the Parsis, used in their religious ceremonies.

Coniferæ.

Common on high elevations in Kashmir.	The fruit and the oil are officinal and juniper oil is obtained from the fruit.
—do.—	The smoke of the green wood is a powerful emetic.

Natural Order

SCIENTIFIC NAME.	COMMON NAMES.
Taxus baccata, *Linn.*	Barmi, (*Pb.*). Postil, (*Kash.*). Yew, (*Eng.*).
Pinus longifolia, *Roxb.*	Chil, Chir. (*Pb.*). Chir Pine (*Eng.*).
Pinus excelsa, *Wall.*	Kail, (*Pb.*). Kayir, (*Kash.*). Blue Pine, (*Eng.*).

Coniferæ. (*Contd.*).

LOCALITY.	PARTS USED AND THEIR USES.
Common in shady ravines in Deodar forests.	The leaves contain a volatile oil, tannic and galic acids and a resinous substance called *toxin*. They are poisonous and are used for the same purpose as digitalis. The leaves are sold as *Talispatr* in Bombay.
2,500′—5,500′. Common in Jammu Province.	Turpentine and other by-products are obtained from the resin. Wood is used for building purposes and is exported to the Punjab in large quantities.
3,000′—8,000′. Common in Kashmir forests.	One of the most important timber trees that grow in Kashmir forests. The timber is exported to the plains in large quantities and is used for building construction, furniture and railway ties. The tree yields tar and resin but in small quantities, it is not therefore tapped.

Natural Order

SCIENTIFIC NAME.	COMMON NAMES.
Pinus Gerardiana, *Wall.*	Chilgoza.
Cedrus Libani, ***Barrel.*** Var. Deodara, ***Hook.***	Deodar, (***Hind.***). Diar, (***Panj.***). Divdar, (***Kash.***). Himalayan Cedar, (***Eng.***).
Abies Webbiana, ***Kindley.***	Budul, (***Kash.***). Tung, (***Pb.***). Silver Fir, (***Eng.***).

Coniferæ. *(Contd.)*.

LOCALITY.	PARTS USED AND THEIR USES.
Kishtwar & Astore.	The fruit is eaten roasted. The seeds yield an oil which is considered anodyne and stimulant.
5,000′–10,000′. Common in Kashmir forests. Krishanganga valley and Kishtwar.	The most valuable and important timber of Kashmir. It is very durable and lasts for centuries under favourable conditions. It is very good for boat building. Large quantities are exported from Kashmir every year. All the Railways in Northern India use Deodar scantlings for ties. The wood yields an oil called *Tel kelon* or *Tel chelon* which is used in skin diseases and leprosy.
Common in Kashmir between 8,000′ and 11,000′. Grows above the Deodar zone.	The leaves are the *Talispatr* of the Bazar and are regarded as carminative, expectorant, stomachic and tonic. The wood is used in cheap construction and for

Natural Order

Natural Order

Orchis latifolia, *Linn.*	Salab-misri.

Natural Order

Curcuma Zedoaria, *Rosc.*	Kachur.

Natural Order

Iris kumaonensis, *Wall.*	Krisham. (*Kash.*).

LOCALITY.	PARTS USED AND THEIR USES.
	Coniferæ. (*Contd.*).
	inside work. In Kashmir shingles and ceilings are exclusively made of Fir. Fresh wood makes good match splints. The wood is also suitable for paper making. Kashmir can supply large quantities of Fir for these industries. Creosated sleepers are used by the railways in India.
	Orchideæ.
In wet places at about 9,000′. Rare. Gulmarg, Gurez.	The root is used as a tonic.
	Scitamineæ.
Wild in the lower ranges; also cultivated.	Powdered root is given in gonorrhœa.
	Irideæ.
Common upto 11,000′. Razdhani, Gulmarg.	The roots and the leaves are given in fevers.

SCIENTIFIC NAME.	COMMON NAMES.
Natural Order	
Agave americana, *Linn.*	Banskeora.
Natural Order	
Polygonatum multiflorum, *All.*	Solomon's seal, (*Eng.*).
Urginea indica, *Kumth.*	Jangli Piaz.
Colchicum luteum, *Baker.*	Hiran tutia, (*Hind.*). Suranjan, (*Pers.*).
Natural Order	
Acorus calamus, *Linn.*	Vach, (*Sans.*).

LOCALITY.	PARTS USED AND THEIR USES.
	Amaryllideæ.
Found in Jammu Province.	The expressed juice of the leaves is administered by American doctors as a resolvent and alterative, especially in syphillis, scrofula and other cancers.
	Liliaceæ.
In shady places under trees. Langet.	Gujjars keep the rhizomes in milk which does not get sour.
Lower forests of Mirpur.	The bulb is officinal in Indian Pharmacopœia. Indian Vaids use it in the preparation of *Chandi Bhasma*, "ashes of silver".
Common in the valley and in lower ranges.	See page 12.
	Aroideæ.
In lakes at all	The root stock is emetic

Natural Order

	Vai, (*Kash.*).

Natural Order

Adiantum venustum, *Don.*	Par-i-siyaoshan, (*Kash.*). Kalijanth, (*Hind.*). Maiden's hair fern, (*Eng.*).

Natural Order

Morels.	Guchi, (*Pb.*). Kan-guch, (*Kash.*). Mushroom, (*Eng.*).

LOCALITY.	PARTS USED AND THEIR USES.
	Aroideæ. (*Contd.*).
elevations.	in large doses and stomachic and carminative in small doses.
	Filices
Upto 8,000′ in shady moist places.	The leaves and stem are used with other drugs in fevers.
	Fungi.
From 4,000′ to 8,000′. Common in the valley in April.	The plant is edible. Dried guchi's are exported to the Punjab, where they sell at a very high price.

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OF

THERAPEUTIC AGENTS, WITH THEIR EXPLANATIONS.

Alterative.	A medicine that alters the process of nutrition and excretion, restoring the normal functions of an organ without producing any obvious impression on any of the organs of the body.
Anodyne.	A medicine that gives relief from pain.
Anthelmintic.	An agent or medicine either killing or rendering powerless intestinal worms. A vermicide.
Antiaphrodisiac.	See aphrodisiac.
Antiperiodic.	A remedy which antagonises the poison of periodic disorders like ague.
Antipyretic.	An agent reducing the temperature of fever.

Antiseptic.	A remedy that prevents or destroys the bacteria upon which putrefaction depends.
Antispasmodic.	That allays and relieves convulsions or spasmodic pains.
Aperient.	A mild purgative or laxative.
Aphrodisiac.	An agent stimulating the sexual passion.
Astringent.	An agent producing contraction of organic tissues or arresting hæmorrhages, diarrhœas etc.
Carminative.	A calming or soothing medicine.
Cholagogue.	A remedy promoting secretion or excretion of bile.
Cordial.	Pertaining to the heart, exhilarant or stimulant.
Demulcent.	A substance soothing or protecting the mucous membranes.
Deobstruent.	A medicine that removes functional obstructions of the body.
Depurative.	A medicine that purifies or cleanses.
Diaphoretic.	A medicine causing an increase of perspiration.
Diuretic.	A medicine that increases secretion or flow of urine.

Emetic.	An agent that induces vomiting.
Emmenagogue.	A medicine that stimulates the menstrual flow.
Emollient.	A substance which by external application softens the skin or internally soothes an inflamed surface.
Expectorant.	A remedy that promotes expectoration.
Febrifuge.	A medicine that lessens fever.
Laxative.	An agent which tends to loosen the bowels.
Mydriatic.	A medicine that causes dilatation of the pupil.
Narcotic.	A drug that produces narcosis or stupor.
Refrigerant.	A medicine that has cooling properties, and lowers bodily temperature.
Resolvent.	That causes the absorption of inflammatory or other swellings.
Restorative.	A drug tending to restore health or strength.
Rubefacient.	A remedy that by irritation of the ends of the nerves of the skin causes distention of the capillaries.
Sedative.	An agent that exerts a soothing effect by lowering functional activity.

Stimulant.	An agents that excites and produces rapid increase of vital energy.
Stomachic.	A medicine relieving the pain of the stomach.
Suppurative.	An agent that produces pus.
Tonic.	Invigorating.
Vermifuge.	A medicine that expels intestinal worms.
Vesicant.	A blistering agent or application.

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